
The Use of the Humanized Mouse Model in Gene Therapy and Immunotherapy for HIV and Cancer.

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Public Summary:

Scientific Abstract:

HIV and cancer remain prevailing sources of morbidity and mortality worldwide. There are current efforts to discover novel therapeutic strategies for the treatment or cure of these diseases. Humanized mouse models provide the investigative tool to study the interaction between HIV or cancer and the human immune system in vivo. These humanized models consist of immunodeficient mice transplanted with human cells, tissues, or hematopoietic stem cells that result in reconstitution with a nearly full human immune system. In this review, we discuss preclinical studies evaluating therapeutic approaches in stem cell-based gene therapy and T cell-based immunotherapies for HIV and cancer using a humanized mouse model and some recent advances in using checkpoint inhibitors to improve antiviral or antitumor responses.

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